F-28 Program Overview

Joseph Pellettiere
Chief Scientific and Technical
Advisor
for Crash Dynamics
Federal Aviation Administration
Washington DC, USA

ABSTRACT

The Federal Aviation Administration has been conducting research to support the development of airframe level crashworthiness requirements for transport aircraft. The crashworthiness performance of most currently built aircraft have demonstrated acceptable performance. The FAA would like to leverage these lessons learned by conducting additional research to develop guidelines for future designs. These research have include data analyses, accident review, and identifying gaps in knowledge. One of the gaps identified was the crash performance of regional jet sized metallic aircraft. To fill this gap the FAA has conducted a series of three tests of a Fokker F-28 regional jet. These tests consisted of two vertical drops of a barrel section at 30 feet per second, one from the forward fuselage and one from the wingbox. A third test that was recently conducted was a full scale impact of an entire aircraft onto a dirt berm with a nominal forward velocity of 70 feet per second and a vertical impact velocity of 30 feet per second. In all three tests the seats were removed from service from a Boeing 737 and modified to fit into the Fokker F-28. In all tests, several Anthropomorphic Test Devices (ATDs) were included to gather occupant load and possible injury data. The airframe was instrumented with accelerometers along the fuselage at several locations as well as full video coverage.